NWG
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UCLA-Computer Science Graphics Overview

I. Hardware

A. Imlac PDS-1

We have 2 PDS-1 graphics consoles each with 8K 16 bit words of memory.

The display screens are mounted with the long axis vertical.

B. DEC 340

We have a DEC 340 Display Station with a light pen. Associated with the station are a Rand Tablet and a Lincoln Wand. There is a display processor which drives the DEC 340 which reads its instruction from the XDS Sigma 7 memory via dedicated memory port.

II. Software

A. Imlacs

We have not as yet developed any software for the PDS-1. We have used the Imlac provided text and graphics support software to utilize the PDS-1's as alphameric and limited graphics consoles (at 1200 baud).

These are used only with the SEX timesharing system.

B. DEC 340

We have over several years developed a package of Library routines* which interface to FORTRAN programs for use with the DEC 340 and its associated devices. This station is used only with a stand alone system (RAD 75).

Several programs have been implemented using these facilities among them are:

*SMOG (sub-program manager for On-Line Graphics).

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1. MOSAIC

MOSAIC is an experimental computer graphics program which permits a user to manipulate the parameters of a fairly complex polar co-ordinate equation. The object is to explore the space of interesting images which can be produced. Library facilities are provided so that the user can save interesting images. He can also combine the images in many ways to form mosaic-like patterns. An Arriflex 16mm camera can be driven through the use of this program, and we have used the system to generate several films which served as a basis for video-graphics experiments (TV videotape).

2. FISHEYE

Using the interactive part of MOSAIC, and a peculiar, exponential mapping function, studies were made in the presentation of CRT images too large to fit in normal form on our 10" scope. The images are mapped in such a way that part of the image is shown at linar scale, the remainder being squeezed up at the outer edges of the screen. Thus, the global image is always visible, but details are apparent mainly in the linear region. This study formed the basis of an M.S. thesis.

3. MOVIE

This is a movie script language which allows the user to compose a scenario describing the entrance and exit of images on the CRT. Mosaics can be created. Images can fade-in, fade-out, dissolve, expand, zoom, contract. Dramatis personae (in the form of MOSAIC images) can be defined and their movements described. The program computes the movements of all images for the duration of the film and then calls on the MOSAIC generating routines to make the film. Camera control is automatic.

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III. Intentions

A. Imlacs

We intend to equip our PDS-1's with the mouse and keyset configuration used at SRI-ARC. We intend to attempt to make use of PDS-1 programs developed at other sites. We intend to develop an assembler for PDS-1 programs. We are thinking about a subroutine Library for PDS-1 graphics for FORTRAN (or other higher level languages).

B. DEC 340

We intend eventually to bring the DEC 340 hardware and software facilities into the SEX system.